

HYDATID CYST IN LIVER - A CASE REPORT IN HUMAN

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ABSTRACT

Hydatid disease (Cystic echinococcosis) is a parasitic disease that remains a clinical problem worldwide, especially in areas where animal husbandry and subsistence farming form an integral part of community. In humans, accidental infection occurs as a result of ingestion of eggs of the dog tapeworm *Echinococcus granulosus* along with contaminated food and water. Among the visceral organs affected in human beings, liver is the most commonly involved organ. We present a case report of a 23 year old female patient who presented initially with abdominal pain with loss of appetite and the problem was persisting for nearly five years. For confirmation of hydatid cyst, the patient was referred to the Department of Veterinary Parasitology for serological confirmation. Using the sera of the suspected patient, Latex agglutination test (LAT) was performed and the sample was found positive.

KEYWORDS: Hydatidosis, Liver, Human, LAT

INTRODUCTION

Hydatid disease caused by *Echinococcus* sp. remains a clinical problem worldwide, especially in areas where animal husbandry and subsistence farming forms an integral part of community life. In human beings the disease is mainly caused by *Echinococcus granulosus*, causative agent of cystic hydatid disease (CHD) and *Echinococcus multilocularis*, causative agent of multilocular hydatid disease (MHD) which causes a major public health burden in many countries. Dogs are the principle reservoir of adult worm and close contact with such reservoir may be a risk for contraction of the disease in herbivorous intermediate host and human beings. The most commonly affected organs by hydatid cysts are the liver and the lung. The presence of the cyst remains clinically silent and is diagnosed incidentally or when complications occur. Many countries, particularly those with large number of breeding cattle and sheep flocks like Asia, New Zealand, Australia and Mediterranean countries are endemic for the disease. We present herein a case of a hydatid cyst in liver of a 54 year old man

CASES

A 54 year old man who presented initially with abdominal pain along with loss of appetite, nausea and vomiting and the problem was persisting for nearly three years, he also complaint that right side pain in the chest, patient has no history of cardiac disease, coughing, sneezing. Upon CT scan cystic lesion of 3cm between inferior right lobe of liver. For confirmation of cyst, patient was brought Department of Veterinary Parasitology, Madras Veterinary College, Chennai as serological confirmation

MATERIALS AND METHODS

Methodology

Latex Agglutination Test (LAT)

Latex agglutination test was carried out as per the method described by Deyetal (2007) with some modifications.

Preparation of Sensitized Latex Particles

Ten per cent suspension of dyed latex particle coated with Hydatid cyst fluid antigen (25mg/ml) using 0.06M carbonate – bicarbonate buffer, pH 9.6 kept at 37° C for 6 hours with constant shaking. Sensitized bead centrifuged at 6800g for 3 minutes and pellet resuspended as 1 per cent suspension in phosphate buffer saline containing 5mg/ml of bovine serum albumin. Latex beads were left at 37°C overnight with constant shaking. Latex beads centrifuged as before and pellet resuspended in PBS contain 0.5mg/ml of BSA and 0.1 per cent sodium azide as 0.25 per cent suspension. Latex Agglutination Test was carried out by taking twenty µl of serum and 20 µl of latex sensitized beads coated antigen were placed in a slide and they were mixed with toothpick, slide was rotated for 5 minutes and observed for the reaction. Agglutination of latex particles within 2-3 minutes of the test was considered as positive and when latex particle remains as a homogenous suspension, the samples were considered negative.

RESULTS AND DISCUSSIONS

Results

By utilizing the reference serum sample of the suspected patient in LAT, the sample when mixed with the sensitized beads showed the presence of agglutination rapidly between 2 and 3 minutes of the performance of the test.

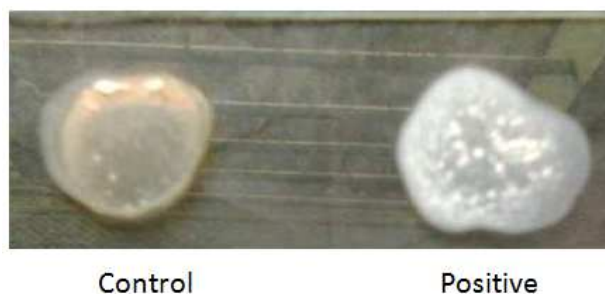


Figure 1

DISCUSSIONS

Human echinococcosis is a zoonotic infection caused by the tapeworm of the genus *Echinococcus*. Three of the four *Echinococcus* species are of medical importance in the human beings, including *Echinococcus granulosus* that causes cystic echinococcosis, *Echinococcus multilocularis* that causes alveolar echinococcosis, and *Echinococcus vogeli*. *Echinococcus granulosus* is the most common of the three. *Echinococcus multilocularis* is rare but is the most virulent, and *Echinococcus vogeli* is the rarest. The incidence cystic echinococcosis in endemic areas ranges from 1-220 cases per 100,000 inhabitants, while the incidence of alveolar echinococcosis ranges from 0.03-1.2 cases per 100,000 inhabitants, making it a much more rare form of echinococcosis (Alitinoretal, 1995; Brown et al, 1995) In the human beings, hydatid cyst disease most commonly occurs in the liver (55-70%) followed by the lung (18-35%), and these two organs can be affected simultaneously in about 5-13% of cases.

CONCLUSIONS

The clinical presentation of hydatid disease depends on the size and site of the cyst. Most patients with hydatid cysts remain asymptomatic, even into advanced age. Some cysts may produce dysfunction of involved organs, including biliary obstruction, cirrhosis, bronchial obstruction, renal outflow obstruction, increased intracranial pressure, and hydrocephalus. The hydatid cyst of the liver can induce obstructive jaundice and abdominal pain. Involvement of the lungs produces chronic cough, dyspnea, pleuritic chest pain, and hemoptysis. Cyst in the brain may cause headache, dizziness, and specific neurological deficits depending on the location of the cyst in the brain. Free rupture of the echinococcal cyst may cause anaphylaxis, and rupture may also release smaller cysts that can circulate to other organs. Pre-operative diagnosis of hydatid cysts can be made ultrasonically and confirmed by a CT scan. The CT scan has an accuracy of 98% to demonstrate the daughter cysts, and it is the best test to differentiate hydatid cysts from amebic cysts. The treatment of hydatid cyst is principally surgical resection (Daradkeh et al, 2006; Liu et al, 1993; Menezes et al, 2003; Safioeas et al, 1999). However, pre- and post-operative one-month courses of Albendazole and two weeks of Praziquantel should be considered in order to sterilize the cyst, decrease the chance of anaphylaxis, decrease the tension in the cyst wall, and reduce the recurrence rate post-operatively. biliary and pyogenic cyst in the liver.

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